AG/HG Exhibit 1.0

BEFORE THE
ILLINOIS COMMERCE COMMISSION

Illinois-American Water Company Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges Pursuant to 83 Ill. Adm. Code 655	: : : : : :	Docket No. 06-0196

Direct Testimony of
Scott J. Rubin

on behalf of

The People of the State of Illinois
and
The Village of Homer Glen

July 18, 2006

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1. Introduction

Q. Please state your name and business address.

A. My name is Scott J. Rubin. My business address is 3 Lost Creek Drive, Selinsgrove, PA.

Q. By whom are you employed and in what capacity?

A. I am an independent consultant and an attorney. My practice is limited to matters affecting the public utility industry.

Q. What is the purpose of your testimony in this case?

A. I have been asked by the Office of Attorney General (AG) and the Village of Homer Glen (HG) to review the annual reconciliations filed by Illinois-American Water Company (IAWC or Company) for its Purchased Water (PW) and Purchased Sewage Treatment (PS) surcharges.

Q. What are your qualifications to provide this testimony in this case?

A. I have testified as an expert witness before utility commissions or courts in the District of Columbia and in the states of Arizona, Delaware, Kentucky, Illinois, Maine, Maryland, New Jersey, New York, Ohio, Pennsylvania, and West Virginia. I also have testified as an expert witness before two committees of the U.S. House of Representatives and one committee of the Pennsylvania House of Representatives. I also have served as a consultant to the staffs of two state utility commissions, several national utility trade associations, and state and local governments throughout the country. Prior to establishing my own consulting and law practice, I was employed by the Pennsylvania Office of Consumer Advocate from 1983 through January 1994 in increasingly responsible positions. From 1990 until I left that Office, I was one of two senior attorneys

in that Office. Among my other responsibilities in that position, I had a major role in setting their policy positions on water and electric matters. In addition, I was responsible for supervising the technical staff of that Office. I also testified as an expert witness for that Office on rate design and cost of service issues.

In addition, from 1990 until 1994, I chaired the Water Committee of the National Association of State Utility Consumer Advocates (NASUCA). In that position, I served as the liaison between NASUCA members and various industry and government associations, including the National Association of Water Companies, the American Water Works Association, and the U.S. Environmental Protection Agency. I was frequently called upon by those organizations to provide the consumer perspective on various water-industry issues, including customer service.

Throughout my career, I developed substantial expertise in matters relating to the economic regulation of public utilities. I have published articles, contributed to books, written speeches, and delivered numerous presentations, on both the national and state level, relating to regulatory issues. I have attended numerous continuing education courses involving the utility industry. I also periodically participate as a faculty member in utility-related educational programs for the Institute for Public Utilities at Michigan State University, the American Water Works Association (AWWA), and the Pennsylvania Bar Institute. Appendix A to this testimony is my curriculum vitae.

Q. Do you have any experience that is particularly relevant to the issues in this case?

A. Yes, I do. During the past ten years or more, I have reviewed numerous PW and PS adjustment filings for the New Jersey Division of Ratepayer Advocate. Those cases

usually have been resolved prior to the filing of testimony, so I do not show them on my curriculum vitae. But I am very familiar with the use of automatic adjustment mechanisms for PW and PS costs and the manner in which those costs are reconciled.

I also recently testified on behalf of the Pennsylvania Office of Consumer Advocate concerning, among other issues, the reasonableness of a large water utility (Aqua Pennsylvania, Inc.) adopting a PW adjustment clause. There I recommended that the utility should not be permitted to use a PW adjustment clause because of the relatively small magnitude of PW costs and the utility's history of revenues and sales increasing faster than PW expenses.

In addition, I recently submitted testimony in another case involving IAWC (Docket Nos. 05-0681, et al.). That case raises several issues concerning IAWC's metering, meter reading, and billing practices, which are directly related to the accuracy of the PW reconciliations in this case.

2. Overview

Q. Please provide an overview of the issues that you will be addressing.

A. My review and analysis of the PW and PS filings begins with attempting to verify the accuracy of the information contained in the filing. I focused on data for the wholesale purchase and retail sale of water.

I also investigated the Company's level of unaccounted for water (UFW) in each of its PW areas, and the level of infiltration and inflow (I/I) in each of its PS areas. UFW and I/I are measures of waste and are a tangible indication of the level and quality of

preventive maintenance engaged in by the Company. One of the primary risks of automatic adjustment mechanisms for PW and PS costs is that utilities may be skimping on maintenance because they can automatically pass along the costs of waste (UFW and I/I) to customers. The Commission must guard against utilities engaging in what can be a profitable short-term strategy: reducing maintenance expenditures and letting customers pick up the tab for increased waste through the automatic PW and PS surcharges.

I also evaluate whether the Company is in compliance with specific requirements imposed on water utilities that use Lake Michigan water.

Finally, I propose specific adjustments to the PW and PS rates charged in each of the Company's service areas.

Q. What is the history of PW and PS adjustments for the Company?

A. In November 1993, the Commission approved the first PW agreements, and the use of an automatic adjustment surcharge to recover PW costs, for the previous owners of IAWC's Chicago area water systems, Citizens Utilities Company of Illinois (Citizens) and DuPage Utility Company (DuPage) (Docket Nos. 92-0454 and 92-0455).[1] In that order, the Commission specifically limited the amount of UFW that could be included in the surcharge calculation. The limits were 12.28% for DuPage and 12.43% for Citizens. In addition, the order required the Lake Michigan Water Supply Charge to appear as a separate line item on customers' bills.

[1] DuPage was owned by Citizens, the Commission having approved the acquisition in 1991 (Docket No. 90-0405).

In later orders, the Commission approved additional PW agreements and surcharges for two other portions of Citizens' service area, Liberty Ridge West and Liberty Ridge East (Docket No. 99-0150 issued May 19, 1999, and Docket No. 01-0553 issued Dec. 5, 2001, respectively). In both instances, the Commission authorized the use of the existing PW surcharge tariff for the new service areas.

On December 19, 2001, new Commission regulations became effective for PW and PS surcharges. 83 Ill. Adm. Code §§ 655.10, *et seq.* Those regulations required utilities with existing surcharges to file new tariffs within 180 days to reflect the requirements of the regulations. IAWC's PW and PS tariffs (Tariff No. 4, sheets 50-53 (water); and Tariff No. 5, sheets 60-68 (sewer)) contain language that is essentially identical to the language of the Commission's regulations. Importantly for purposes of this case, the regulations and tariffs provide: "The reconciliation components shall not include costs associated with unaccounted for water or any storm water inflow or infiltration in contravention of an Order of the Commission directing that such costs not be reflected in rates." 83 Ill. Adm. Code § 655.50(b)(3)(C); IAWC Tariff No. 4, sheet 52; IAWC Tariff No. 5, sheet 63.

3. Summary

Q. Please summarize your major findings and conclusions.

A. I find serious problems with the accuracy and reliability of the Company's data, particularly regarding the quantity of water purchased at wholesale and the quantity sold at retail. These data errors are serious and pervasive and make it impossible to accurately determine the proper variable rates to be charged for purchased water.

I also find that the reported level of unaccounted for water is unacceptably high in certain rate areas and impossibly low in others (that is, the Company's records show it is consistently selling more water than it buys).

For purchased water expense, therefore, I conclude that variable rates should not be set using the method that has been used traditionally. In its place, I recommend a method that sets rates based on the current cost of purchasing wholesale water, with a reasonable allowance for unaccounted for water.

For purchased sewage treatment expenses, I find that the rates in the Country Club area should be reduced to recognize the reduction that should occur in the level of infiltration and inflow. A recently completed storm sewer project by DuPage County should result in a substantial reduction in infiltration and inflow, which would greatly reduce the amount of wastewater flowing from IAWC's Country Club system. This change should be reflected in rates now to avoid the Company accumulating a substantial over-collection from its customers.

4. Generic Purchased Water Issues

A. Quality and Accuracy of Metering Data

Q. Do you have concerns with the quality and accuracy of IAWC's metering data?

A. Yes, I do. I testified about these concerns at length in consolidated complaint cases that are currently pending at the Commission (Docket Nos. 05-0681, et al.). Briefly, the investigation and analysis in that docket turned up numerous instances where IAWC's water meters were not working properly, customers were improperly back billed for

water allegedly provided during a previous time period, bills were not estimated properly, bills were estimated for several consecutive months, bills with zero consumption were issued for several consecutive months, and erroneous bills were blamed on the weather instead of on malfunctioning equipment or understaffing of meter reading routes.

Q. How do these metering problems affect this case?

A. It is not possible to accurately establish rates – either through an automatic adjustment mechanism or in a base rate case – without accurate consumption data. The accuracy of consumption data is absolutely critical to establishing the PW rates in this case, as can be seen from the formula (from IAWC's tariff No. 4, sheet 51) that is used for the variable cost component:[2]

$$VC = \frac{VSC + Rv + Ov}{VBU}$$

The formula takes the costs incurred by the Company (including any over- or under-collection from the prior year and any other adjustments) and divides by the number of gallons sold to retail customers. If the number of gallons sold (VBU) is not accurate, then the PW adjustment process cannot be performed accurately.

Q. In your opinion, is it possible to perform an accurate PW surcharge calculation for IAWC at this time?

A. No. From the results of my investigation in Docket Nos. 05-0681, et al., I conclude that there are no assurances that IAWC's metering data are accurate and reliable. For that

[2] VC is the variable charge, that is, the rate per 1000 gallons (or 100 cubic feet) that customers will pay; VSC is the variable charge paid by IAWC to the purchased water supplier; Rv and Ov are the reconciliation and other adjustments; and VBU is the amount of water purchased from IAWC by retail customers, expressed in 1000 gallons (or 100 cubic feet).

reason, I recommended in that docket that the Commission order a full-scale audit of the Company's billing, metering, meter reading, and customer service records and procedures. Until such an audit is concluded, the Company's data cannot be relied upon to establish rates that are accurate, just, or reasonable.

B. Flawed Data: Selling More Water than is Purchased

Q. Have you seen further evidence of the Company's data problems in this case?

A. Yes, I have. In three rate areas, IAWC's data show that it is consistently selling more water to retail customers than IAWC is purchasing from its wholesale supplier. This is physically impossible. Water cannot be "created" in the distribution system, and the amount of water held in storage is relatively small and must be replenished from the wholesale supplier very quickly. It is simply impossible to consistently sell more water than is purchased.

Q. What do you mean by "consistently" selling more water than is purchased?

A. I recognize that there could be a timing difference in the reporting periods for wholesale purchases and retail sales. So it certainly would be plausible to see sales exceeding purchases in one reporting month, but then the reverse would be true in the following month. For example, if retail meters are read on the 5th day of the month and the wholesale meter is read on the 25th day of the month, there could be a short-term mismatch between retail sales and wholesale purchases. But that difference would last only for a month or two (typically entering or leaving the summer peak period).

Q. Please discuss the specific rate areas where the Company's data show sales exceeding purchases.

A. There are three rate areas where the data show sales exceeding purchases: Alpine Heights, Moreland, and Waycinden.

AG/HG Exhibit 1.01 shows the data for Alpine Heights for each month from 2002 through 2005. The data are taken from Exhibit C of the Company's PW filings for each year. Since January 2002, sales have been greater than purchases in 27 of the 48 months. Further, since March 2002, the Company's data show that it sold 1.9 million gallons more than it purchased. Just for 2005, the Company says that it sold 878,000 gallons more than it purchased. The Company purchases an average of less than 2 million gallons per month in this service area, so these discrepancies are significant.

AG/HG Exhibit 1.05 shows similar data for Moreland. In this area, the Company shows sales greater than purchases in 16 of the 48 months from 2002 through 2005. From April through December 2005, total sales exceeded purchases by 238,000 gallons. Moreover, from October through December 2005, total sales were 2.0 million gallons more than total purchases. Here again, the Company's total water purchases average less than 2 million gallons per month, so this is a sizeable difference.

AG/HG Exhibit 1.07 shows similar data for Waycinden. IAWC's data show sales exceeding purchases in 18 of the 48 months from 2002 to 2005, but with an unusual pattern. In 2002 and 2004, the Company shows high levels of lost water – purchases were higher than sales by more than 33 million gallons in each of those years (purchases exceeded sales by more than 16%). But in 2003 and 2005, sales were higher than

purchases by 672,000 gallons and 6.4 million gallons, respectively. In fact, from January through May 2005, and again from August through October 2005, the Company showed sales exceeding purchases in every month. In Waycinden, the Company's purchases average about 14 million gallons per month, so a difference of 6.4 million gallons would represent approximately 2 weeks' total consumption.

These are not just timing differences. They are evidence of fundamental problems with the accuracy of the Company's metering data.

Q. Has the Company attempted to explain how it can sell more water than it buys?

A. We asked the Company to explain this apparent anomaly in each of the three service areas. Its response was the same for all of them. The Company's entire response was: "There can be a timing issue due to the reading of the customers' (Company) meters versus the timing of the reading on purchased water meter. It is possible that the purchased water meter may be recording less water than actually purchased." (IAWC responses to AG 1.3, AG 1.53, and AG 1.75)

Q. Does that response make sense to you?

A. No, it does not. The Company failed to recognize that this is an on-going problem, not just a little timing difference from one month to the next. Further, while it is possible that the wholesale meters are under-recording, it also is possible that the Company is billing retail customers more than they should (through, for example, improperly estimating bills or back billing for consumption during prior periods). In addition, even if the wholesale meters are inaccurate, IAWC would be primarily responsible for the problem. The Company owns and reads the wholesale meter for Alpine Heights and owns and jointly

reads (with the City of Des Plaines) the wholesale meter for Waycinden (responses to AG 1.7 and 1.80, respectively). Further, those meters are read daily, making it unlikely that a metering problem would go undetected for an extended period of time. In Moreland, the meter is owned and read monthly by the City of Chicago (response to AG 1.57).

C. Excessive Levels of Unaccounted for Water

Q. The Company has seven PW rate areas and you have only discussed three of them. Are the data for the other four areas sufficiently reliable to establish rates?

A. No, the data are not sufficiently reliable for the other four rate areas. IAWC has a common billing system and common metering and meter reading procedures throughout its service area. Further, IAWC has placed the blame for some of its billing and metering problems on faulty meter reading devices that it inherited when it acquired the former Citizens Utilities systems. All of the PW service areas were formerly owned by Citizens Utilities, so I do not believe there are any assurances that the metering data are accurate. Moreover, from my investigation, I have serious doubts that all of IAWC's problems are confined to the former Citizens Utilities companies or are just a result of a certain generation of faulty metering reading devices. The problems appear to be much more widespread than that.

For example, as I discussed in my testimony in Docket 05-0681, et al., IAWC does not appear to be adequately tracking or investigating customers who received numerous consecutive estimated bills or numerous consecutive bills with zero consumption. This appears to be a problem statewide, not just in the greater Chicago area.

Q. Do the data in the other four service areas exhibit any patterns that lead you to question their accuracy?

A. Yes, they do. The Chicago Suburban, DuPage, and Southwest Suburban areas all have shown high levels of UFW at some point between 2002 and 2005. I use the term UFW advisedly here. Usually that term refers to water that is a combination of "non-revenue water" (such as water used to fight fires or for system maintenance) and truly unaccounted for water (that is, water this is lost through leakage). But with all of IAWC's metering problems, I do not know if high levels of UFW are truly being "lost" or if they just aren't resulting in revenue because of faulty metering and meter reading.

In any event, Chicago Suburban, DuPage, and Southwest Suburban all have experienced years when the level of UFW has been excessive.

In Chicago Suburban, the big spike in UFW came in 2003, when the Company purchased 148 million gallons more than it sold – a loss level of 21%, as shown on AG/HG Exhibit 1.02. In simple terms, it means that in order for the Company to sell 4,000 gallons to customers in that year, it had to buy 5,000 gallons. That is an unacceptably high level of UFW, especially in a system that has to purchase all of the water it sells. In 2004 and 2005, the level of UFW came down to the 10% to 11% range. What I don't know is whether the apparent improvement is the result of changes the Company made, or if there were metering problems that made 2003 look worse (or 2004 and 2005 look better). But a one-year spike in UFW is unusual and would not normally be explained by the physical operations of the utility.

DuPage shows an excessive amount of UFW in every year, as shown in AG/HG Exhibit 1.03. From 2003 through 2005, its UFW has been in the range of 14% to 17% on an annual basis (and in excess of 18% for the April-December time period that is used for the PW calculation). Once again, I do not know the cause of the problem. It could be water that is leaking or it could be faulty metering, or poor record keeping. Once again, though, the discrepancy is large enough to make me question the accuracy of the Company's data.

The same is true in the Southwest Suburban area, as shown in AG/HG Exhibit 1.06. Here the level of UFW has gone from a low of 6.5% in 2002 to a high of 17.5% in 2003. In 2004, it came down to 11%, but in 2005 it was back up to more than 15%. As I mentioned before, this type of fluctuation is unusual in the physical operations of a utility.

Further, this experience in Southwest Suburban is even more puzzling because the area includes the Village of Homer Glen. Homer Glen is one of the areas that is the focus of the complaint proceeding, where hundreds of faulty meters were replaced in 2005. If under-registering meters were replaced in 2005 (and in some areas as early as 2003), why was the level of UFW so much higher in 2005 than it was in 2004? In 2004, the Company "lost" 321.5 million gallons in this area (11.0% of all water purchased). In 2005, it "lost" 527.5 million gallons (15.5%). If the problems were caused by faulty metering equipment, it would make no sense for UFW to <u>increase</u> by 200 million gallons at a time when faulty meters are being replaced.

Q. You have not discussed the seventh PW rate area, Fernway. Why is that?

A. The monthly data from 2002 through 2005 for Fernway are shown on AG/HG Exhibit 1.04. This is the only area where the data look fairly consistent over this four-year time period. There is an occasional month where it looks like more water is sold than purchased, but it's never more than one month at a time. That is what I would expect to be the case when the difference is the result of a timing difference in the reading of wholesale and retail meters. There was a spike in UFW in 2003, but on closer examination, that appears to be the result of a large billing correction made in January 2003. Otherwise, UFW has been consistently in the 10% range (which appears to be reasonable) and it fluctuates very little from year to year. This is the only area where the data appear to be somewhat normal.

D. Flawed Data: Erroneous Wholesale Metering Records

Q. Did you find any other significant data errors?

A. Yes, I did. In six of the PW areas, the wholesale water meters are read daily (all of the areas except Moreland). In response to various interrogatories, the Company provided copies of the daily meter readings for 2004 and 2005 (AG 1.7, 1.22, 1.40, 1.49, 1.67, and 1.80). In three of the six areas, the daily meter readings do not match the monthly totals shown in Exhibit C of the Company's PW filing.

Q. What do you mean that the totals do not match?

A. I expect there to be minor variation between the daily totals and the monthly totals, due to differences in the billing date by the wholesale supplier. Over the course of an entire year, however, the difference should be extremely small. In three of the areas, however,

the differences were much too large to be the result of just a timing difference. Specifically:

- DuPage County: the daily readings total 183.069 million gallons (MG) for 2005, while the filing shows wholesale purchases of 709.041 MG for that year;
- Southwest Suburban: daily readings for 2005 total 4,565.436 MG, but the filing shows wholesale purchases of 3,396.231 MG for the year;
- Waycinden: daily readings total 222.309 MG for 2005, while the filing shows wholesale purchases of 169.142 MG for the same time period.

Differences of this magnitude cannot be the result of timing differences. Remember, these are both supposed to be measuring exactly the same thing: the amount of water the Company is purchasing from its wholesale supplier. Either we were provided with incomplete or incorrect data or there is a fundamental problem with the way in which the wholesale metering and billing is being conducted and monitored by IAWC.

Q. What did you do when you discovered these discrepancies?

A. Initially, the Company provided scanned copies of the daily metering records. We typed this information into a spreadsheet. When we discovered that the totals were so different from the information in the filing, we asked the Company to verify that it was sending us complete and accurate information and to also send us the actual spreadsheet files where it records the daily meter readings (in case we had entered some information incorrectly).

The Company responded in an email message on July 11 with the spreadsheet files. The totals I discuss above are based on the data in the Company's files. The Company still has not responded to our request to verify that the data we were provided are complete and accurate.

Q. Other than the large difference between daily meter reading data and monthly readings, is there anything else about these data that concern you?

A. Yes. If the daily metering data for Southwest Suburban and Waycinden are accurate, the Company actually purchased much more water than appears in its filing. Southwest Suburban already has a high level of UFW (as I discussed earlier). If the daily meter readings are accurate, then IAWC really purchased 1.2 billion gallons more than appears in its filing for Southwest Suburban. That could mean that the Company is selling water to other customers that do not appear in its PW filing. This would pose a serious problem and would require further investigation to determine how retail rates should be set. Or, if there are no other customers, then the level of UFW would be 37% which would be extraordinarily high. In Waycinden, if the daily meter readings are accurate, the level of UFW would be 21% which, again, is extremely high.

E. Failure to Comply with Requirements for Use of Lake Michigan Water

Q. Are you familiar with the Illinois Department of Natural Resources (DNR) regulations concerning the use of Lake Michigan water?

A. I am generally familiar with those regulations at 17 Ill. Adm. Code Part 3730 (Allocation of Water from Lake Michigan). I focused particularly on DNR's regulations concerning the control of UFW in water systems that use Lake Michigan water.

Q. Do these regulations raise additional concerns that should be addressed in this case?

A. Yes, they do. IAWC's response to DNR's regulations provides a further indication of the Company's lack of attention to the importance of controlling the level of UFW. As I discussed earlier, if the Commission is not vigilant, a utility can profit in the short-term

by reducing maintenance costs and recovering the cost of additional wasted water through the PW adjustment.

Q. What is your specific concern?

A. DNR's regulations limit utilities using Lake Michigan water to having no more than 8% "unaccounted-for flows" (UFF). The calculation of UFF is different from the calculation of UFW that is familiar to the Commission. UFW is simply the difference between water purchased (or produced) and water sold. In contrast, UFF gives the utility credit for a certain amount of "unavoidable leakage" based on the age of water mains in the system. UFF also allows the utility to account for water that is used but not metered (such as water for fire protection and system maintenance). Thus, UFF is a subset of UFW and will always be less than UFW. DNR's regulations set out the specific method for calculating UFF.

DNR's regulations require IAWC to submit "proposals designed to reduce or eliminate wasteful water use and to reduce unaccounted-for flows to 8% or less, based on net annual pumpage, and procedures used to determine efficiency of water metering or accounting." 17 Ill. Adm. Code § 3730.307(b).

Q. Does the Company have areas where UFF exceeds 8%?

A. Yes, it does. According to the Company's calculations (provided in response to AG 2.2), it had UFF exceeding 8% in 2004 in Arrowhead, Homer Township, and West Suburban. In 2005, its UFF exceeded 8% in Homer Township and DuPage. Arrowhead and DuPage are part of the DuPage County rate area; Homer Township and West Suburban are part of the Southwest Suburban rate area. A copy of the Company's response to AG 2.2,

showing the specific UFF percentages in each DNR service area, is attached as AG/HG Exhibit 1.08.

Q. What plans or proposals does IAWC have to address this problem?

A. We specifically asked IAWC to provide its plans and proposals to reduce UFF to below 8% (interrogatories AG 2.3 and AG 2.4). In response, the Company provided copies of letters sent to DNR which essentially say that the Company will replace some water meters and that should solve the problem. I am attaching as AG/HG Exhibit 1.09, a complete copy of the Company's responses to AG 2.3 and AG 2.4.

Q. Does the Company's response indicate that it is attempting to control the level of UFW on its Lake Michigan systems?

A. No, it does not. The Company does not appear to be engaged in a rigorous program to minimize the level of wasted water. In those areas where the Company appears to have high UFW, we asked for details of the Company's efforts to investigate and control UFW (interrogatories AG 1.19, 1.36, 1.46, and 1.63). The Company's responses, which are attached as AG/HG Exhibit 1.10, show that the Company believes that replacing some water meters and fixing a few relatively minor leaks will address its problem. Even though the questions specifically ask for documents showing the results of the Company's investigations, no documents were provided. This indicates to me that investigating and controlling the level of UFW is a very low priority for the Company.

Q. In AG/HG Exhibit 1.10, the Company states: "AWWA standards allow for an acceptable range of unaccounted for water between 10% and 20%." Is this accurate?

A. No, it is not accurate and, frankly I am very surprised that IAWC would think this is true. The American Water Works Association (AWWA) has three major types of documents: Standards, Statements of Policy, and Committee Reports and Manuals. AWWA Standards are technical documents that usually delineate specific operation, maintenance, installation, or manufacturing procedures and specifications. There are no AWWA Standards that address water loss or UFW.

AWWA Statements of Policy are broader (and usually very short) documents that concern the operations and management of water utilities. AWWA has a Statement of Policy on Metering and Accountability (attached as AG/HG Exhibit 1.11), but it does not contain any numerical standards or goals. The major contribution of this Statement of Policy is to recommend that water utilities conduct regular water audits to "evaluate the effectiveness of metering and meter reading systems, as well as billing, accounting, and loss control programs." This is exactly what I recommended in Docket No. 05-0681, et al.

Finally, AWWA does have a relevant Committee Report on UFW. Ten years ago, in July 1996, the Leak Detection and Water Accountability Committee issued a report (attached as AG/HG Exhibit 1.12). The report puts to rest any notion that AWWA finds as much as 15% UFW to be acceptable, let alone 20% as claimed by the Company. The report begins: "In fact, AWWA has never adopted a policy or issued guidelines to the effect that 15 percent unaccounted-for water is acceptable." After reviewing earlier

investigations into UFW, and explaining how utilities should be controlling and monitoring UFW, the AWWA Committee Report concluded: "As the twenty-first century approaches, the goal for unaccounted-for water should be less than 10 percent."

This report was published in the monthly Journal that is distributed to all AWWA members 10 years ago. I am very surprised that a manager at a major water utility would still think that as much as 20% UFW is acceptable or in accordance with industry standards.

Q. What do you conclude?

A. I conclude that IAWC is not treating the level of UFW seriously and is not taking actions to minimize the level of UFW. It appears that the Company is simply content to let customers pay the cost for wasted water through the PW surcharge.

5. Setting Rates for Purchased Water

Q. Given all of the problems and concerns you identified with IAWC's PW filings, what do you recommend?

A. Based on the poor quality of data and the apparent lack of attention to the control of UFW, I recommend that the Commission prohibit IAWC from using an automatic PW surcharge for variable costs until a comprehensive billing and metering audit is completed (as I recommend in Docket 05-0681, et al.). I do not believe that it is possible to determine an accurate, verifiable PW variable-cost surcharge for IAWC at this time.

I recognize that IAWC purchases water to serve its Chicago area customers and I am not trying to prevent the Company from recovering a reasonable level of purchased

water costs. But, in my opinion, the Company cannot provide the basic data that are required to calculate PW variable-cost surcharges in this case, and it cannot provide assurances that it will be able to properly reconcile the variable cost component of the surcharges in future cases.

I recommend, therefore, that a PW rate per 1,000 gallons should be established in this case. The rate should not be subject to reconciliation and should remain at that level until the Company's next base rate case, or until the Company successfully petitions the Commission to reinstitute an automatic PW surcharge for variable costs.

Q. How will you determine the PW rate per 1,000 gallons in this case?

A. I have calculated a specific variable-cost rate in each of the seven PW areas. I am proposing that the rate should be set using the lowest level of UFW shown in the Company's filings for each service area since IAWC acquired the utilities from Citizens in January 2002. In those areas where the lowest UFW level is less than zero, then I will set the level equal to zero. I also note that none of the lowest UFW levels exceeds the UFW standards established in the Commission's 1993 order that first permitted the use of a PW surcharge (12.28% for DuPage County and 12.43% for the other PW service areas). If the lowest level had been in excess of these standards, then I would have reduced the level to the standard established by the Commission.

The UFW percentage is then multiplied by the current (December 2005) cost for wholesale water, as shown in the Company's filing for each service area. For example, if the UFW percentage is 8% and the wholesale cost of water is $1.50 per 1000 gallons, then the retail cost would be 1.08 x $1.50 = $1.62. If this amount, net of any refunds,

exceeds the rate that the Company filed (and noticed to customers), then I will set the rate equal to the Company's filed rate.

Q. What will you do with any over- or under-collections?

A. I propose to prohibit the Company from recovering any variable-cost under-collections from 2005. The calculation of such under-collections depends on having accurate retail sales information, which we do not have. I will, however, return any over-collections to customers at an equal amount per customer, where possible. Even though the over-collections were from variable charges, in order to return them through the per 1,000 gallon charge, it would be necessary to have accurate information about the number of gallons sold to customers. We do not have accurate information about sales, so I am instead proposing to return over-collections in Chicago Suburban and DuPage County to customers on a per-billing unit basis through the fixed charge component. In Fernway, the over-collection will be returned through the variable charge because that area does not currently have a fixed-cost component to its PW rate.

Q. Is it fair to eliminate the under-collections but require the Company to return the over-collections? Don't the same data problems affect both?

A. The same data problems do affect both over- and under-collections, and I agree that my proposal may not seem "fair" to the Company. But my proposal is not designed to treat the Company and customers with equal "fairness." Metering, billing, data quality, and UFW are solely within the Company's control and the problems are solely the Company's fault. Customers do not bear the responsibility for these problems and customers should not be penalized in any fashion because of them. Where the Company's flawed records show that IAWC owes customers money, then the money

should be returned to customers. I don't know if the amount is accurate, but the Company should not be allowed to benefit from its numerous, pervasive errors.

Q. What are the specific rates you recommend and how do they compare with the rates the Company proposed in its filing?

A. The specific variable-cost rates I recommend for each PW rate area are shown in AG/HG Exhibit 1.13. The exhibit also includes a comparison to the variable-cost rate effective April 1, 2005, and the rate proposed by the Company in this case.

The return of over-collections in Chicago Suburban and DuPage County on a per-customer basis are shown on AG/HG Exhibit 1.14. The amounts shown on this exhibit are in addition to any over- or under-collections in the fixed cost component that are already reflected in the Company's filing. On this exhibit, therefore, I also show the resulting fixed cost rates that should be charged.

On AG/HG Exhibit 1.15, I calculate the monthly PW bill for a fairly typical customer (using 7,000 gallons per month) in each rate area. This exhibit shows that the rates I am recommending are lower than or equal to IAWC's proposed rates in every rate area.

Q. Can you provide assurances that the rates you develop accurately reflect both the amount of water IAWC purchases and the amount it sells?

A. No, I cannot. I am doing the best that I can with the information that is available. But I do not have confidence in the accuracy of the Company's data for either retail sales of water or wholesale purchases of water. Without that critically important information, it is not possible to be certain that the rates will exactly match the cost of purchased water.

6. Purchased Sewage Treatment Issues

A. Infiltration and Inflow

Q. Do the same types of problems affect the Company's sewer rate areas?

A. No, not entirely. In three of the four sewer service areas, the Company's charges for purchased sewage treatment service (PS) are flat rates per equivalent residential customer.[3] Therefore, retail water metering issues do not affect the PS charges in those areas (the exception is Romeoville). There is a serious concern, however, with the sewage treatment equivalent of unaccounted for water, which is known as infiltration and inflow (I/I).

Q. What is I/I?

A. Rather than water leaking out of the system, the major problem with many sewage collection systems is additional water getting into the system. This "foreign" water is known as infiltration and inflow. Specifically, the Illinois Environmental Protection Agency (IEPA) defines these terms as follows:

> Infiltration--Water other than wastewater that enters a sewer system (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connection, or manholes.
>
> Inflow--Water other than wastewater that enters a sewer system (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash water, or drainage. [4]

[3] In calculating equivalent residential customers, a customer in a multi-family building is equivalent to 85% of a single-family home.
[4] 35 Ill. Adm. Code § 365.130.

Simply, I/I increases the volume of sewage that must be treated and, of course, results in higher costs for the treatment plant, which are passed on to IAWC.

Q. Can I/I be minimized?

A. Yes, it can. Just as a utility's maintenance practices can reduce UFW in a water system, sound maintenance can reduce the level of I/I in a wastewater system. Unlike UFW, however, I/I often is caused by facilities that are beyond the utility's direct control, such as homes that connect their storm drains to the sewer line or community storm sewers that improperly flow into the sanitary sewage collection system.

Q. Are there standards by which the Commission can determine how much sewage flow is the result of I/I?

A. Yes, a general rule of thumb is that a sewer system should be designed for residential customers to produce a sewage flow of 100 gallons per capita per day (gpcd).[5] Flow rates well in excess of this amount are most likely due to I/I. I will use 100 gpcd for residential customers as a basis for estimating the extent to which I/I is affecting the Company's PS costs. I also will assume 3 people per residential account, which is consistent with U.S. Census data for the service area.[6]

[5] 35 Ill. Adm. Code § 370.310.

[6] U.S. Census Bureau Quick Facts < http://quickfacts.census.gov > shows an average of 2.63 people per household in Illinois. In IAWC's service area, the figures range from approximately 2.7 people in DuPage County and Woodridge to 3.2 people in Bolingbrook.

B. Country Club Service Area

Q. Using that standard, are adjustments required in any of the Company's sewer service areas?

A. Yes, I am proposing an adjustment in the Country Club service area.

Q. What does your analysis show for the Country Club service area?

A. According to Exhibit A of the Company's filing, the Country Club area treated an average of 16,820 gallons per residential customer per month in 2005. This is an average of 186.9 gpcd.[7] This level of sewage flow indicates a very substantial level of I/I.

Q. Does the Company agree that there is a substantial level of I/I in the Country Club area?

A. Yes, it does. A 2003 letter from the Company documented that one of the major causes of this very high flow rate was a problem with the DuPage County storm sewer system. A copy of this letter, provided in response to AG 1.86, is attached as AG/HG Exhibit 1.16.

Q. Has this problem been corrected?

A. Yes, the Company states in response to AG 1.84 (attached as AG/HG Exhibit 1.17) that DuPage County corrected this problem in October 2005. As IAWC states in that exhibit, "The Company believes that this will improve the amount of wastewater treated from the sanitary collection system."

[7] 16,820 gallons per customer per month, divided by 30 days per month, divided by 3 people per customer = 186.89 gallons per capita per day (gpcd).

Q. Has IAWC made an adjustment to the level of PS volume or expense to account for this correction of a serious I/I problem?

A. No, it has not. If this is not corrected, the result will be a substantial over-collection of costs during 2006. I am recommending, therefore, that the level of I/I experienced by the Company during 2005 should be reduced by 50% in projecting expenses during 2006. This is consistent with the Company's statement in 2003 that the storm drain problem is "a big contributor of flow during wet weather." AG/HG Exhibit 1.16, p. 2. I show the calculation of this adjustment on AG/HG Exhibit 1.18. The result is that the monthly PS rate for a residential customer in Country Club should be $26.67, rather than $34.75 proposed by the Company. Consistent with the Company's tariffs, the multi-family rate is 85% of this amount, or $22.67.

Q. How does your assumption of a 50% reduction in I/I flow from the storm sewer project compare with IAWC's other PS rate areas?

A. Even after my assumed 50% reduction in I/I flow, Country Club's average residential flow rate still would be substantially higher than IAWC's other sewer service areas. The average flow rate in Valley View is 9,160 gallons per residential account per month. In Rollins, the average flow rate is 6,990 gallons per account per month. Even after my adjustment in Country Club, the flow rate would be 12,911 gallons – almost twice the flow rate in Rollins and 40% more than the average flow in Valley View. I conclude, therefore, that my adjustment in Country Club is a reasonable one.

7. Conclusion

Q. Please summarize your findings and conclusions.

A. In summary, I have found serious problems with the accuracy and reliability of the Company's data, particularly regarding the quantity of water purchased at wholesale and the quantity sold at retail. These data errors are serious and pervasive and make it impossible to accurately determine the proper variable rates to be charged for purchased water. I also find that the reported level of unaccounted for water is unacceptably high in certain rate areas and impossibly low in others, which creates further problems in attempting to develop accurate, variable-cost rates for purchased water.

For purchased water expense, therefore, I recommend a method that sets rates based on the current cost of purchasing wholesale water, with a reasonable allowance for unaccounted for water. In no event, however, should the Commission implement a rate that is higher than the rate proposed by IAWC.

For purchased sewage treatment expenses, I find that the rates in the Country Club area should be reduced to recognize the reduction that should occur in the level of infiltration and inflow. This change should be reflected in rates now to avoid the Company accumulating a substantial over-collection from its customers.

Q. Does this conclude your direct testimony?

A. Yes, it does.

Appendix A

Scott J. Rubin
Attorney + Consultant
3 Lost Creek Drive • Selinsgrove, PA 17870

Current Position

Public Utility Attorney and Consultant, Selinsgrove, PA. 1994 to present. I provide legal, consulting, and expert witness services to various organizations interested in the regulation of public utilities.

Previous Positions

Lecturer in Computer Science, Susquehanna University, Selinsgrove, PA. 1993 to 2000.

Senior Assistant Consumer Advocate, Office of Consumer Advocate, Harrisburg, PA. 1990 to 1994. I supervised the administrative and technical staff and shared with one other senior attorney the supervision of a legal staff of 14 attorneys.

Assistant Consumer Advocate, Office of Consumer Advocate, Harrisburg, PA. 1983 to 1990.

Associate, Laws and Staruch, Harrisburg, PA. 1981 to 1983.

Law Clerk, U.S. Environmental Protection Agency, Washington, DC. 1980 to 1981.

Research Assistant, Rockville Consulting Group, Washington, DC. 1979.

Current Professional Activities

Member, American Bar Association, Public Utility Law Section.

Member, American Water Works Association.

Admitted to practice law before the Supreme Court of Pennsylvania, the New York State Court of Appeals, the United States District Court for the Middle District of Pennsylvania, the United States Court of Appeals for the Third Circuit, and the Supreme Court of the United States.

Previous Professional Activities

Member, American Water Works Association, Rates and Charges Subcommittee, 1998-2001.

Member, Federal Advisory Committee on Disinfectants and Disinfection By-Products in Drinking Water, U.S. Environmental Protection Agency, Washington, DC. 1992 to 1994.

Chair, Water Committee, National Association of State Utility Consumer Advocates, Washington, DC. 1990 to 1994; member of committee from 1988 to 1990.

Member, Board of Directors, Pennsylvania Energy Development Authority, Harrisburg, PA. 1990 to 1994.

Member, Small Water Systems Advisory Committee, Pennsylvania Department of Environmental Resources, Harrisburg, PA. 1990 to 1992.

Member, Ad Hoc Committee on Emissions Control and Acid Rain Compliance, National Association of State Utility Consumer Advocates, 1991.

Member, Nitrogen Oxides Subcommittee of the Acid Rain Advisory Committee, U.S. Environmental Protection Agency, Washington DC. 1991.

Education

J.D. with Honors, George Washington University, Washington, DC. 1981.

B.A. with Distinction in Political Science, Pennsylvania State University, University Park, PA. 1978.

Publications and Presentations

"Quality of Service Issues," a speech to the Pennsylvania Public Utility Commission Consumer Conference, State College, PA. 1988.

K.L. Pape and S.J. Rubin, "Current Developments in Water Utility Law," in *Pennsylvania Public Utility Law* (Pennsylvania Bar Institute). 1990.

Presentation on Water Utility Holding Companies to the Annual Meeting of the National Association of State Utility Consumer Advocates, Orlando, FL. 1990.

"How the OCA Approaches Quality of Service Issues," a speech to the Pennsylvania Chapter of the National Association of Water Companies. 1991.

Presentation on the Safe Drinking Water Act to the Mid-Year Meeting of the National Association of State Utility Consumer Advocates, Seattle, WA. 1991.

"A Consumer Advocate's View of Federal Pre-emption in Electric Utility Cases," a speech to the Pennsylvania Public Utility Commission Electricity Conference. 1991.

Workshop on Safe Drinking Water Act Compliance Issues at the Mid-Year Meeting of the National Association of State Utility Consumer Advocates, Washington, DC. 1992.

Formal Discussant, Regional Acid Rain Workshop, U.S. Environmental Protection Agency and National Regulatory Research Institute, Charlotte, NC. 1992.

S.J. Rubin and S.P. O'Neal, "A Quantitative Assessment of the Viability of Small Water Systems in Pennsylvania," *Proceedings of the Eighth NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute (Columbus, OH 1992), IV:79-97.

"The OCA's Concerns About Drinking Water," a speech to the Pennsylvania Public Utility Commission Water Conference. 1992.

Member, Technical Horizons Panel, Annual Meeting of the National Association of Water Companies, Hilton Head, SC. 1992.

M.D. Klein and S.J. Rubin, "Water and Sewer -- Update on Clean Streams, Safe Drinking Water, Waste Disposal and Pennvest," *Pennsylvania Public Utility Law Conference* (Pennsylvania Bar Institute). 1992.

Presentation on Small Water System Viability to the Technical Assistance Center for Small Water Companies, Pa. Department of Environmental Resources, Harrisburg, PA. 1993

"The Results Through a Public Service Commission Lens," speaker and participant in panel discussion at Symposium: "Impact of EPA's Allowance Auction," Washington, DC, sponsored by AER*X. 1993.

"The Hottest Legislative Issue of Today -- Reauthorization of the Safe Drinking Water Act," speaker and participant in panel discussion at the Annual Conference of the American Water Works Association, San Antonio, TX. 1993.

"Water Service in the Year 2000," a speech to the Conference: "Utilities and Public Policy III: The Challenges of Change," sponsored by the Pennsylvania Public Utility Commission and the Pennsylvania State University, University Park, PA. 1993.

"Government Regulation of the Drinking Water Supply: Is it Properly Focused?," speaker and participant in panel discussion at the National Consumers League's Forum on Drinking Water Safety and Quality, Washington, DC. 1993. Reprinted in *Rural Water*, Vol. 15 No. 1 (Spring 1994), pages 13-16.

"Telephone Penetration Rates for Renters in Pennsylvania," a study prepared for the Pennsylvania Office of Consumer Advocate. 1993.

"Zealous Advocacy, Ethical Limitations and Considerations," participant in panel discussion at "Continuing Legal Education in Ethics for Pennsylvania Lawyers," sponsored by the Office of General Counsel, Commonwealth of Pennsylvania, State College, PA. 1993.

"Serving the Customer," participant in panel discussion at the Annual Conference of the National Association of Water Companies, Williamsburg, VA. 1993.

"A Simple, Inexpensive, Quantitative Method to Assess the Viability of Small Water Systems," a speech to the Water Supply Symposium, New York Section of the American Water Works Association, Syracuse, NY. 1993.

S.J. Rubin, "Are Water Rates Becoming Unaffordable?," *Journal American Water Works Association*, Vol. 86, No. 2 (February 1994), pages 79-86.

"Why Water Rates Will Double (If We're Lucky): Federal Drinking Water Policy and Its Effect on New England," a briefing for the New England Conference of Public Utilities Commissioners, Andover, MA. 1994.

"Are Water Rates Becoming Unaffordable?," a speech to the Legislative and Regulatory Conference, Association of Metropolitan Water Agencies, Washington, DC. 1994.

"Relationships: Drinking Water, Health, Risk and Affordability," speaker and participant in panel discussion at the Annual Meeting of the Southeastern Association of Regulatory Commissioners, Charleston, SC. 1994.

"Small System Viability: Assessment Methods and Implementation Issues," speaker and participant in panel discussion at the Annual Conference of the American Water Works Association, New York, NY. 1994.

S.J. Rubin, "How much should we spend to save a life?," *Seattle Journal of Commerce*, August 18, 1994 (Protecting the Environment Supplement), pages B-4 to B-5.

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"Surviving the Safe Drinking Water Act," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, Reno, NV. 1994.

"Safe Drinking Water Act Compliance -- Ratemaking Implications," speaker at the National Conference of Regulatory Attorneys, Scottsdale, AZ. 1995. Reprinted in *Water*, Vol. 36, No. 2 (Summer 1995), pages 28-29.

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S.J. Rubin, "Water Rates: An Affordable Housing Issue?," *Home Energy*, Vol. 12 No. 4 (July/August 1995), page 37.

Speaker and participant in the Water Policy Forum, sponsored by the National Association of Water Companies, Naples, FL. 1995.

Participant in panel discussion on "The Efficient and Effective Maintenance and Delivery of Potable Water at Affordable Rates to the People of New Jersey," at The New Advocacy: Protecting Consumers in the Emerging Era of Utility Competition, a conference sponsored by the New Jersey Division of the Ratepayer Advocate, Newark, NJ. 1995.

J.E. Cromwell III, and S.J. Rubin, *Development of Benchmark Measures for Viability Assessment* (Pa. Department of Environmental Protection 1995).

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"Changing Customers' Expectations in the Water Industry," speaker at the Mid-America Regulatory Commissioners Conference, Chicago, IL. 1996, reprinted in *Water* Vol. 37 No. 3 (Winter 1997), pages 12-14..

"Recent Federal Legislation Affecting Drinking Water Utilities," speaker at Pennsylvania Public Utility Law Conference, Pennsylvania Bar Institute, Hershey, PA. 1996.

"Clean Water at Affordable Rates: A Ratepayers Conference," moderator at symposium sponsored by the New Jersey Division of Ratepayer Advocate, Trenton, NJ. 1996.

"Water Workshop: How New Laws Will Affect the Economic Regulation of the Water Industry," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, San Francisco, CA. 1996.

E.T. Castillo, S.J. Rubin, S.K. Keefe, and R.S. Raucher, "Restructuring Small Systems," *Journal American Water Works Association*, Vol. 89, No. 1 (January 1997), pages 65-74.

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"Capacity Development – More than Viability Under a New Name," speaker at National Association of Regulatory Utility Commissioners Winter Meetings, Washington, DC. 1997.

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"Capacity Development in the Water Industry," speaker at the Annual Meeting of the National Association of Regulatory Utility Commissioners, Boston, MA. 1997.

"The Ticking Bomb: Competitive Electric Metering, Billing, and Collection," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, Boston, MA. 1997.

Scott J. Rubin, "A Nationwide Look at the Affordability of Water Service," *Proceedings of the 1998 Annual Conference of the American Water Works Association*, Water Research, Vol. C, No. 3, pages 113-129 (American Water Works Association, 1998).

Scott J. Rubin, "30 Technology Tips in 30 Minutes," *Pennsylvania Public Utility Law Conference*, Vol. I, pages 101-110 (Pa. Bar Institute, 1998).

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"Consumer Advocacy for the Future," speaker at the Age of Awareness Conference, Changes and Choices: Utilities in the New Millennium, Carlisle, PA. 1999.

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Scott J. Rubin, "Current Developments in the Water Industry," *Pennsylvania Public Utility Law Conference*, Pennsylvania Bar Institute, Harrisburg, PA. 2000.

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Janice A. Beecher and Scott J. Rubin, "Ten Practices of Highly Effective Water Utilities," *Opflow*, April 2001, pp. 1, 6-7, 16; reprinted in *Water and Wastes Digest*, December 2004, pp. 22-25.

Scott J. Rubin, "Pennsylvania Utilities: How Are Consumers, Workers, and Corporations Faring in the Deregulated Electricity, Gas, and Telephone Industries?" Keystone Research Center. 2001.

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Scott J. Rubin, Consumer Protection in the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2001.

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In the Matter of the Application of Citizens Utilities Company for a Hearing to Determine the Fair Value of its Properties for Ratemaking Purposes, to Fix a Just and Reasonable Rate of Return Thereon, and to Approve Rate Schedules Designed to Provide such Rate of Return, Arizona Corporation Commission, Docket Nos. E-1032-95-417, *et al*. 1996. Concerning rate design, cost of service, and the price elasticity of water demand, on behalf of the Arizona Residential Utility Consumer Office.

Cochrane v. Bangor Hydro-Electric Company, Maine Public Utilities Commission, Docket No. 96-053. 1996. Concerning regulatory requirements for an electric utility to engage in unregulated business enterprises, on behalf of the Maine Public Advocate.

In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Monongahela Power Company and Related Matters, Public Utilities Commission of Ohio, Case No. 96-106-EL-EFC. 1996. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cleveland Electric Illuminating Company and Toledo Edison Company and Related Matters, Public Utilities Commission of Ohio, Case Nos. 96-107-EL-EFC and 96-108-EL-EFC. 1996. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Ohio Power Company and Columbus Southern Power Company and Related Matters, Public Utilities Commission of Ohio, Case Nos. 96-101-EL-EFC and 96-102-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

An Investigation of the Sources of Supply and Future Demand of Kentucky-American Water Company (Phase II), Kentucky Public Service Commission, Docket No. 93-434. 1997. Concerning supply and demand planning, on behalf of the Kentucky Office of Attorney General, Public Service Litigation Branch.

In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cincinnati Gas and Electric Co. and Related Matters, Public Utilities Commission of Ohio, Case No. 96-103-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

Bangor Hydro-Electric Company Petition for Temporary Rate Increase, Maine Public Utilities Commission, Docket No. 97-201. 1997. Concerning the reasonableness of granting an electric utility's request for emergency rate relief, and related issues, on behalf of the Maine Public Advocate.

Testimony concerning H.B. 1068 Relating to Restructuring of the Natural Gas Utility Industry, Consumer Affairs Committee, Pennsylvania House of Representatives. 1997. Concerning the provisions of proposed legislation to restructure the natural gas utility industry in Pennsylvania, on behalf of the Pennsylvania AFL-CIO Gas Utility Caucus.

In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cleveland Electric Illuminating Company and Toledo Edison Company and Related Matters, Public Utilities Commission of Ohio, Case Nos. 97-107-EL-EFC and 97-108-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

In the Matter of the Petition of Valley Road Sewerage Company for a Revision in Rates and Charges for Water Service, New Jersey Board of Public Utilities, Docket No. WR92080846J. 1997. Concerning the revenue requirements and rate design for a wastewater treatment utility, on behalf of the New Jersey Division of Ratepayer Advocate.

Bangor Gas Company, L.L.C., Petition for Approval to Furnish Gas Service in the State of Maine, Maine Public Utilities Commission, Docket No. 97-795. 1998. Concerning the standards and public policy concerns involved in issuing a certificate of public convenience and necessity for a new natural gas utility, and related ratemaking issues, on behalf of the Maine Public Advocate.

In the Matter of the Investigation on Motion of the Commission into the Adequacy of the Public Utility Water Service Provided by Tidewater Utilities, Inc., in Areas in Southern New Castle County, Delaware, Delaware Public Service Commission, Docket No. 309-97. 1998. Concerning the standards for the provision of efficient, sufficient, and adequate water service, and the application of those standards to a water utility, on behalf of the Delaware Division of the Public Advocate.

In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cincinnati Gas and Electric Co. and Related Matters, Public Utilities Commission of Ohio, Case No. 97-103-EL-EFC. 1998. Concerning fuel-related transactions with affiliated companies and the appropriate ratemaking treatment and regulatory safeguards involving such transactions, on behalf of the Ohio Consumers' Counsel.

Olde Port Mariner Fleet, Inc. Complaint Regarding Casco Bay Island Transit District's Tour and Charter Service, Maine Public Utilities Commission, Docket No. 98-161. 1998. Concerning the standards and requirements for allocating costs and separating operations between regulated and unregulated operations of a transportation utility, on behalf of the Maine Public Advocate and Olde Port Mariner Fleet, Inc.

Central Maine Power Company Investigation of Stranded Costs, Transmission and Distribution Utility Revenue Requirements, and Rate Design, Maine Public Utilities Commission, Docket No. 97-580. 1998. Concerning the treatment of existing rate discounts when designing rates for a transmission and distribution electric utility, on behalf of the Maine Public Advocate.

Pa. Public Utility Commission v. Manufacturers Water Company, Pennsylvania Public Utility Commission, Docket No. R-00984275. 1998. Concerning rate design on behalf of the Manufacturers Water Industrial Users.

In the Matter of Petition of Pennsgrove Water Supply Company for an Increase in Rates for Water Service, New Jersey Board of Public Utilities, Docket No. WR98030147. 1998. Concerning the revenue requirements, level of affiliated charges, and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.

In the Matter of Petition of Seaview Water Company for an Increase in Rates for Water Service, New Jersey Board of Public Utilities, Docket No. WR98040193. 1999. Concerning the revenue requirements and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.

In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Ohio Power Company and Columbus Southern Power Company and Related Matters, Public Utilities Commission of Ohio, Case Nos. 98-101-EL-EFC and 98-102-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Dayton Power and Light Company and Related Matters, Public Utilities Commission of Ohio, Case No. 98-105-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Monongahela Power Company and Related Matters, Public Utilities Commission of Ohio, Case No. 99-106-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

County of Suffolk, et al. v. Long Island Lighting Company, et al., U.S. District Court for the Eastern District of New York, Case No. 87-CV-0646. 2000. Submitted two affidavits concerning the calculation and collection of court-ordered refunds to utility customers, on behalf of counsel for the plaintiffs.

Northern Utilities, Inc., Petition for Waivers from Chapter 820, Maine Public Utilities Commission, Docket No. 99-254. 2000. Concerning the standards and requirements for defining and separating a natural gas utility's core and non-core business functions, on behalf of the Maine Public Advocate.

Notice of Adjustment of the Rates of Kentucky-American Water Company, Kentucky Public Service Commission, Case No. 2000-120. 2000. Concerning the appropriate methods for allocating costs and designing rates, on behalf of the Kentucky Office of Attorney General.

In the Matter of the Petition of Gordon's Corner Water Company for an Increase in Rates and Charges for Water Service, New Jersey Board of Public Utilities, Docket No. WR00050304. 2000. Concerning the revenue requirements and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.

Testimony concerning Arsenic in Drinking Water: An Update on the Science, Benefits, and Costs, Committee on Science, United States House of Representatives. 2001. Concerning the effects

on low-income households and small communities from a more stringent regulation of arsenic in drinking water.

In the Matter of the Application of The Cincinnati Gas & Electric Company for an Increase in Gas Rates in its Service Territory, Public Utilities Commission of Ohio, Case No. 01-1228-GA-AIR, *et al.* 2002. Concerning the need for and structure of a special rider and alternative form of regulation for an accelerated main replacement program, on behalf of the Ohio Consumers' Counsel.

Pennsylvania State Treasurer's Hearing on Enron and Corporate Governance Issues. 2002. Concerning Enron's role in Pennsylvania's electricity market and related issues, on behalf of the Pennsylvania AFL-CIO.

An Investigation into the Feasibility and Advisability of Kentucky-American Water Company's Proposed Solution to its Water Supply Deficit, Kentucky Public Service Commission, Case No. 2001-00117. 2002. Concerning water supply planning, regulatory oversight, and related issue, on behalf of the Kentucky Office of Attorney General.

Joint Application of Pennsylvania-American Water Company and Thames Water Aqua Holdings GmbH, Pennsylvania Public Utility Commission, Docket Nos. A-212285F0096 and A-230073F0004. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Pennsylvania Office of Consumer Advocate.

Application for Approval of the Transfer of Control of Kentucky-American Water Company to RWE AG and Thames Water Aqua Holdings GmbH, Kentucky Public Service Commission, Case No. 2002-00018. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Kentucky Office of Attorney General.

Joint Petition for the Consent and Approval of the Acquisition of the Outstanding Common Stock of American Water Works Company, Inc., the Parent Company and Controlling Shareholder of West Virginia-American Water Company, West Virginia Public Service Commission, Case No. 01-1691-W-PC. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Consumer Advocate Division of the West Virginia Public Service Commission.

Joint Petition of New Jersey-American Water Company, Inc. and Thames Water Aqua Holdings GmbH for Approval of Change in Control of New Jersey-American Water Company, Inc., New Jersey Board of Public Utilities, Docket No. WM01120833. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.

Illinois-American Water Company, Proposed General Increase in Water Rates, Illinois Commerce Commission, Docket No. 02-0690. 2003. Concerning rate design and cost of service issues, on behalf of the Illinois Office of the Attorney General.

Pennsylvania Public Utility Commission v. Pennsylvania-American Water Company, Pennsylvania Public Utility Commission, Docket No. R-00038304. 2003. Concerning rate design and cost of service issues, on behalf of the Pennsylvania Office of Consumer Advocate.

West Virginia-American Water Company, West Virginia Public Service Commission, Case No. 03-0353-W-42T. 2003. Concerning affordability, rate design, and cost of service issues, on behalf of the West Virginia Consumer Advocate Division.

Petition of Seabrook Water Corp. for an Increase in Rates and Charges for Water Service, New Jersey Board of Public Utilities, Docket No. WR3010054. 2003. Concerning revenue requirements, rate design, prudence, and regulatory policy, on behalf of the New Jersey Division of Ratepayer Advocate.

Chesapeake Ranch Water Co. v. Board of Commissioners of Calvert County, U.S. District Court for Southern District of Maryland, Civil Action No. 8:03-cv-02527-AW. 2004. Submitted expert report concerning the expected level of rates under various options for serving new commercial development, on behalf of the plaintiff.

Testimony concerning Lead in Drinking Water, Committee on Government Reform, United States House of Representatives. 2004. Concerning the trade-offs faced by low-income households when drinking water costs increase, including an analysis of H.R. 4268.

West Virginia-American Water Company, West Virginia Public Service Commission, Case No. 04-0373-W-42T. 2004. Concerning affordability and rate comparisons, on behalf of the West Virginia Consumer Advocate Division.

West Virginia-American Water Company, West Virginia Public Service Commission, Case No. 04-0358-W-PC. 2004. Concerning costs, benefits, and risks associated with a wholesale water sales contract, on behalf of the West Virginia Consumer Advocate Division.

Kentucky-American Water Company, Kentucky Public Service Commission, Case No. 2004-00103. 2004. Concerning rate design and tariff issues, on behalf of the Kentucky Office of Attorney General.

New Landing Utility, Inc., Illinois Commerce Commission, Docket No. 04-0610. 2005. Concerning the adequacy of service provided by, and standards of performance for, a water and wastewater utility, on behalf of the Illinois Office of Attorney General.

People of the State of Illinois v. New Landing Utility, Inc., Circuit Court of the 15th Judicial District, Ogle County, Illinois, No. 00-CH-97. 2005. Concerning the standards of performance for a water and wastewater utility, including whether a receiver should be appointed to manage the utility's operations, on behalf of the Illinois Office of Attorney General.

Hope Gas, Inc. d/b/a Dominion Hope, West Virginia Public Service Commission, Case No. 05-0304-G-42T. 2005. Concerning the utility's relationships with affiliated companies, including an appropriate level of revenues and expenses associated with services provided to and received from affiliates, on behalf of the West Virginia Consumer Advocate Division.

Monongahela Power Co. and The Potomac Edison Co., West Virginia Public Service Commission, Case Nos. 05-0402-E-CN and 05-0750-E-PC. 2005. Concerning review of a plan to finance the construction of pollution control facilities and related issues, on behalf of the West Virginia Consumer Advocate Division.

Joint Application of Duke Energy Corp., et al., for Approval of a Transfer and Acquisition of Control, Case Kentucky Public Service Commission, No. 2005-00228. 2005. Concerning the risks and benefits associated with the proposed acquisition of an energy utility, on behalf of the Kentucky Office of the Attorney General.

Commonwealth Edison Company proposed general revision of rates, restructuring and price unbundling of bundled service rates, and revision of other terms and conditions of service, Illinois Commerce Commission, Docket No. 05-0597. 2005. Concerning rate design and cost of service, on behalf of the Illinois Office of Attorney General.

Pennsylvania Public Utility Commission v. Aqua Pennsylvania, Inc., Pennsylvania Public Utility Commission, Docket No. R-00051030. 2006. Concerning rate design and cost of service, on behalf of the Pennsylvania Office of Consumer Advocate.

Central Illinois Light Company d/b/a AmerenCILCO, Central Illinois Public Service Company d/b/a AmerenCIPS, and Illinois Power Company d/b/a AmerenIP, proposed general increases in rates for delivery service, Illinois Commerce Commission, Docket Nos. 06-0070, et al. 2006. Concerning rate design and cost of service, on behalf of the Illinois Office of Attorney General.

Grens, et al., v. Illinois-American Water Co., Illinois Commerce Commission, Docket Nos. 5-0681, et al. 2006. Concerning utility billing, metering, meter reading, and customer service practices, on behalf of the Illinois Office of Attorney General and the Village of Homer Glen, Illinois.

Commonwealth Edison Company Petition for Approval of Tariffs Implementing ComEd's Proposed Residential Rate Stabilization Program, Illinois Commerce Commission, Docket No. 06-0411. 2006. Concerning a utility's proposed purchased power phase-in proposal, in behalf of the Illinois Office of Attorney General.